InfraMap CORP

February 29, 2016

Raymond B. Chandler
State Subsurface Utility Engineer
Georgia Department of Transportation
One Georgia Center, 10th Floor
600 West Peachtree Street
Atlanta, GA 30308

Re: Task Order: 7
Job Order: 6
PI Number: 0013549
SR 21 at CS 705/Parkside Blvd in Port Wentworth – SR 21 Pedestrian Bridge
Chatham County

Dear Raymond:

S.U.E. Task Order 7, Job Order 6, P.I. Number 0013549, has been completed and has been submitted via GDOT SFTP Site. The reproducible plans are posted on the GDOT SFTP Site under "Utilities/Uploads" section in the folders /SUE /0013549/Final Submittal/.

The total linear footage of underground utilities mapped was approximately 10,997 feet, with 8,899 feet mapped at Quality Level B. Electronic verification was performed using a MetroTech 810 and a Pipehorn.

Please feel free to contact me should you have any questions or comments.

Truly yours,

INFRAMAP CORP.

Hannah J. Bell

Hannah J. Bell, P.E.
Southeast Regional Director

Georgia Department of Transportation QL-B SUE Deliverables Checklist

Revised: 12/18/2014

PI #: 0013549

Project Description: SR 21 At CS 705/Parkside Blvd In Port Wentworth - SR 21 Pedestrian Bridge

County: Chatham

SUE Consultant: InfraMap Corp.

SUE Task Order # or Prime: 7

SUE Kick-Off meeting date: 12/03/15

SUE LOS accepted date: 12/04/15 - LOS Provided by GDOT

The SUE Deliverables Checklist offers the current minimum requirements for GDOT SUE projects as an organized collection of information or a series of options. This Checklist has been provided as a benefit to the SUE Provider and should be used in conjunction with professional judgment, education, and experience. Not all items on the Checklist may be applicable in all circumstances as each project may have many unique aspects that should be considered. This Checklist has been prepared in accordance with recognized engineering principles, standards, and practices. It should not be used without the user's competent knowledge of these principles, standards, and practices. Satisfying this checklist does not guarantee acceptance of the SUE Deliverables as other comments may apply.

Definitions:

LOS = Limits of SUE Investigation
QL-B = Quality Level B SUE Investigation
SUE = In Georgia: Overhead/Subsurface Utility Engineering
GDOT = Georgia Department of Transportation
EDG = Electronic Data Guidelines
PPG = Plan Presentation Guide
SSUE = State Subsurface Utilities Engineer
SURE = Subsurface Utilities Review Engineer

Please indicate one of the following SUE Deliverable Submittals:

☐ **Initial** ☒ **Final**

Instructions:

SUE Professional:

- Fill out the checklist in accordance with the SUE scope for the project
  - Ensure all items checked as "included" have been appropriately shown on the SUE Deliverables
  - Ensure all items scoped, but not found during the SUE investigation are appropriately checked as "excluded"
  - Ensure all items not scoped and not found during the SUE investigation are appropriately checked as "excluded"
  - Provide details for all additions/exclusions in the space provided on the Signature Page
- Submit the SUE Deliverables Checklist to the SSUE/SURE
  - PDF only
  - Once with the Initial SUE Deliverables Submittal
    - Sign and date the Signature Page
  - Once with the Final **Accepted** SUE Deliverables Submittal
    - Certify (sign & seal) and date the Signature Page
- **DO NOT SUBMIT INTERIM CHECKLISTS**

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The QL-B SUE Submittal will include the following information:

For *each* SUE Deliverable Submittal:

Included	Excluded	
☒	☐	Provide all of the Microstation (version required per project's scope) dgn files used and created for the SUE investigation

For *the final* accepted SUE Deliverables Submittal:

Included	Excluded	
☒	☐	Provide a transmittal letter: ▪ Briefly state: • The total linear feet of underground utilities (all Quality Levels) found within the LOS • The total linear feet of all *designated* underground utilities (QL-B) found within the LOS • The type of designating equipment (make and manufacturer) employed for this project
☒	☐	Provide certified (signed and sealed) reproducible scanned images (black & white, PDFs) of the accepted SUE Deliverables ▪ Include a Georgia P.E. or R.L.S. stamp, signature, and date *on each sheet* ▪ The SUE Consultant will be responsible for maintaining the original signed and sealed documents
☒	☐	Provide documentation of an accepted LOS (i.e. an email, LOS meeting minutes, etc.) ▪ **The LOS must be accepted by the Designer and the SSUE prior to beginning the SUE investigation**

SUE Plan Set

Cover Sheet (Sheet 24-000):

Included	Excluded	
☒	☐	Include a Key Map with: ▪ "Overhead/Subsurface Utility Engineering" in the title ▪ Minimal mapping and proposed design information (screened back) ▪ Sheet layout with drawing numbers ▪ Legible mainline and side street names ▪ The SUE LOS (clearly labeled/defined)
☒	☐	Provide a north arrow
☒	☐	Include a Title Block with: ▪ Task order number (if applicable) ▪ Project PI# ▪ County ▪ Consultant Company name, address, Phone #

Georgia Department of Transportation QL-B SUE Deliverables Checklist

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General Notes Sheet (Sheet 24-00A)

Included	Excluded	
☒	☐	Provide General Notes applicable to the SUE investigation
☒	☐	Include the following SUE note under title "SUE Investigation Description" Fill in the appropriate items: ▪ *"An Overhead/Subsurface Utility Engineering (SUE) Investigation was performed and completed on MM/DD/YY for this project. The existing overhead and underground facilities shown hereon within the LOS were included in this SUE Investigation. The presence of these utility facilities has been thoroughly investigated and the method of determining their location is indicated as shown in the plans. Utilities that have been installed after the date above have not been included in this investigation. All other existing topographic features depicted hereon have been referenced from a topographic/mapping survey and control package provided by ___ and dated MM/DD/YY."*
☒	☐	Include a Utility Owners list showing: (see Appendix) ▪ Full name, acronym, and type of utility facility ▪ Address ▪ Phone # of the utility contact (the person actually contacted at each Utility Company who provided the record information) ▪ Include the GDOT and the Railroad as owners, when applicable ▪ A note specifying whether or not the Owner's facilities were found within the LOS at the time of the SUE investigation ▪ Include information indicating limits of ownership. Do not reference stationing.
☒	☐	Include the following note above the Utility Owners list: ▪ *"All the following Utility Owners were reported to have facilities within the vicinity of this project at the time of the SUE Investigation. Utilities found within the LOS at the time of the SUE Investigation are noted for each Utility Owner listed and are shown on the plans hereon."*
☒	☐	Include a Title Block with: ▪ Task order number (if applicable) ▪ Project PI# ▪ County ▪ Consultant Company name, address, Phone #

Utility Legend Sheet (Sheet 24-00B)

Included	Excluded	
☒	☐	Include the current SUE Utility Legend showing **all** of the following employed in the plans: ▪ Line Codes ▪ Symbols ▪ Abbreviations ▪ Quality Levels of SUE definitions

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☒	☐	Include a Title Block with: ▪ Task order number (if applicable) ▪ Project PI# ▪ County ▪ Consultant Company name, address, Phone #

SUE Utility Plan Sheets

Included	Excluded	

☒	☐	Ensure the electronic files containing the SUE information are in compliance with the current GDOT EDG and PPG Standards used for the project (refer to the sections regarding the Utility Plans/Existing Utilities). This includes, but is not limited to:
		▪ Levels
		▪ Colors
		▪ Line Weights
		▪ Line Codes
		▪ Reference files
		  ▪ Naming conventions
		  ▪ Logical names
		  ▪ Update Sequence (UTLE last)

☒	☐	Provide cut sheets to cover the entire SUE investigation limits ▪ Use the most recent cut sheets for the Plans, if available ▪ Create cut sheets if the cut sheets for the Plans are not available ▪ Provide extra cut sheets if the SUE investigation limits extends beyond the cut sheet limits
☒	☐	Include **all** of the following: ▪ North Arrow ▪ Scale (as specified in Project's SUE scope or as instructed by SSUE) ▪ Match lines ▪ Sheet/Drawing numbers
☒	☐	Include a Title Block with: ▪ Task order number (if applicable) ▪ Project PI# ▪ County ▪ Consultant Company name, address, Phone #
☒	☐	Show the street names of mainline and side streets
☒	☐	Ensure the existing utility information stands out and is legible at the appropriate Quality Level (per the current SUE Scope of Services)

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SUE Utility Plan Sheets

Included	Excluded	
☒	☐	Show the accepted LOS ▪ Typically, the LOS will be shown as the greatest extents of the following or as instructed by the SSUE: • The required right-of-way • The existing right-of-way • The limits of cut and/or fill • The limits of any required easements ▪ The LOS will also typically: • Extend a minimum of 200' beyond the beginning and end of the project • Extend a minimum of 100' beyond the end of construction on any side streets
☒	☐	With the exception of items specified in this checklist: Copy the existing utility information (i.e. poles, manholes, etc.) found outside the LOS from the topography mapping, if available, into the UTLE file. If the existing utility information is provided in the UTLE file, remove all items that have been surveyed during the SUE investigation to avoid duplication
☒	☐	Show the limits of ownership for all utilities, by providing the utility abbreviation on the facility, if there is more than one owner for a specific utility within the project's limits. This information may be derived from interviewing the respective utility owners, field investigation, or utility records inspection
☒	☐	Show QL-Delineation symbol when the same Quality Level cannot be achieved throughout a specific utility line's length. Typically this occurs when the designating signal is lost but continuation of the utility is indicated. Show the continuation of the utility at a lesser Quality Level
☒	☐	Clearly indicate when the designating signal of a facility has been lost and continuation cannot be found on record information. Use the End of Information (EOI) symbol to show these locations on the plans.
☒	☐	Survey and clearly show **all** of the visible/accessible utility appurtenances within the LOS ▪ For private/public utility service connectivity: • Show the connectivity of the service lines from the utility main to the respective appurtenance. This is typically from the main to the individual meter, cleanout, etc.
☒	☐	Graphically show the correct orientation of all utility symbols, as applicable

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SUE Utility Plan Sheets

Included	Excluded	
☒	☐	Provide a minimum of one label for the size and material type for all **known** water (potable and non-potable), gravity sanitary sewer, sanitary force mains, gas, petroleum, and steam underground utility facilities within the LOS for each facility on each sheet, if available. Follow the guidelines below for electric, telecom, television, traffic control and ATMS. ▪ For Underground Electric: Clearly label all 3 phase facilities; clearly label all Transmission facilities as "X Transmission" (where "X"=Utility Owner acronym/name). (Do not provide gauges) ▪ For Overhead Electric: Clearly label Transmission facilities as " X Transmission" (where "X"=Utility Owner acronym/name) ▪ For Underground Telecom: Clearly label cable pair sizes/fiber optic strand sizes ▪ For Underground Television: Clearly label direct buried fiber optic strand sizes. (Do not provide coaxial sizes) ▪ For Underground Traffic Control: Clearly label direct buried fiber optic strand sizes. ▪ For ATMS: Clearly label conduit information (i.e. 4-4" ducts or 4-4" conduits); clearly label all direct buried fiber optic strand sizes If the size and material type is **NOT** available: ▪ For all utility mains: clearly label the line as "UNK SIZE/TYPE" ▪ For all utility services: clearly label the line as "SVC", add the abbreviation to the Utility Legend and define as "SERVICE, UNKNOWN SIZE/TYPE"
☒	☐	Provide size/material type for all fire lines, including the lines to the hydrants, if available from record information. These lines should not be labeled as services. It is acceptable to provide a general note regarding the fire hydrant lines, as applicable
☒	☐	Do not show Fire Hydrant valves. Per the current SUE Utility Legend, the Fire Hydrant Assembly includes the associated valve
☒	☐	Clearly indicate with sufficient labels or notation when the line sizes/material types change along a facility main, if available from record information
☒	☐	Show the extents, correct orientation and position of all large/atypical utility structures. All dimensions will be measured and shown on the plans. However, if dimensions cannot be obtained from measuring, dimensions from records will be shown (if available) and noted accordingly. Such structures may include, but are not limited to: ▪ Telephone manholes ▪ Water and electric vaults
☒	☐	Provide all duct run information available for all underground duct lines (power, communications, ATMS, etc.). This may be derived from interviewing the respective utility owners, field investigation, or utility records and includes information such as, but not limited to: ▪ Duct configuration ▪ Number of ducts/inner ducts (small conduit)

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SUE Utility Plan Sheets

Included	Excluded	
☒	☐	Show the extents of and label all Subscriber Loop Carrier (SLC) sites/Remote Terminals/Cell Tower sites within the LOS
☒	☐	Show the underground Traffic Control serving the Traffic Detection Loops, if available from records. Provide a label indicating continuation. Do not include the loops that are in the pavement
☒	☐	Provide a note on applicable cut sheets stating that there were no existing utilities found during the SUE investigation within the LOS shown on that particular sheet

SUE Plan Set: *Individual Utility Requirements*

Sanitary Sewer

Included	Excluded	
☒	☐	Identify all combination sewer systems. Inclusion shall be determined on a case by case basis and coordinated with available storm sewer information. Please contact the SSUE for direction when these systems are encountered to avoid redundancy
☒	☐	Uniquely identify each sanitary sewer manhole in the plan view using one of the following three options: ▪ **OPTION 1:** Label the manhole with a Sanitary Sewer Manhole (SSMH) ID# symbol and reference in a Sanitary Sewer Data Table (See Appendix) • Provide a table on each sheet. The table will contain the sanitary information for that sheet only. (Preferred method) **OR** • Provide a comprehensive table on a separate sheet ▪ **OPTION 2:** Provide a label with a leader line. The label will include a SSMH ID #, the manhole top elevation, and all invert elevations ▪ **OPTION 3:** Label the manhole with a SSMH ID #. Place a separate label (in a clear area) that includes the SSMH ID #, the manhole top elevation, and all invert elevations. (Locate logically in relation to the associated sanitary sewer manhole) **All tops/inverts will be surveyed and shown on the plans and labeled accordingly.** However, if tops/inverts cannot be obtained from the field survey, tops/inverts from records will be shown and noted accordingly. Also, provide appropriate labels for inaccessible manholes and manholes indicated in record information but not visible in the field
☒	☐	Show pipe size, flow direction, and pipe material, if obtainable. Include any noteworthy pipe condition information. However, if this information cannot be obtained from field inspection, then information from records will be shown (if available) and noted accordingly

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Sanitary Sewer

Included	Excluded	
☒	☐	Show sanitary sewer line connectivity at the appropriate Quality Level of information (per the current SUE Scope of Services). Use the following guidelines: ▪ **QL-C:** Connects accessible manholes whose inverts have been surveyed ▪ **QL-D:** Connects sanitary manholes where QL-C does not apply
☒	☐	Show sewer connectivity from inside the LOS to the next connecting sewer structure outside of the LOS ▪ For the next sewer structure outside of the LOS: • Show a directional segment of any other incoming or outgoing pipe(s) • Ensure all sewer data is included in the labeling option selected
☒	☐	Survey all above ground sewer service cleanouts located within the LOS. Show these service cleanouts on the plans and show connectivity to the sewer main. Show connectivity at the appropriate Quality Level of information (per the current SUE Scope of Services)
☒	☐	For any sewer lines crossing the LOS: Show connectivity to the next nearest sewer structure outside of the LOS (outside the LOS to outside the LOS)
☒	☐	Show the location and the corresponding connectivity of all lift stations located within the Project's mapping limits **only** if these lift stations tie into the sewer network found within the LOS if available from records information

Utility Poles / Overhead (OH) Utilities

Included	Excluded	
☒	☐	Clearly show all aerial utilities (including OH guy wires and service lines) found within the LOS ▪ Graphically ensure that the OH facilities do not interfere with the Underground facilities ▪ OH guy wires may be defined as the individual tensioned cables designed to primarily: • add stability to poles **OR** • support overhead signage
☒	☐	Show the location and correct orientation of all guy anchors associated with all required poles
☒	☐	Show all of the following required types of poles found within the LOS: ▪ Utility Poles ▪ Transmission Poles/structures (provide the actual footprint of towers/structures) ▪ Traffic Control Poles (including Strain Poles, Mast Arms) ▪ OH Sign Strain Poles ▪ Highway/street Lighting Poles ▪ Pedestrian Signal/Crosswalk Poles (including Crosswalk Button Posts) ▪ GDOT and Railroad Owned Poles
☒	☐	Provide a unique identification number for each required pole shown above. Show Pole ID# in the plan view and reference in a Pole Data Table
☒	☐	Provide a completed Pole Data Table (See Appendix)

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Utility Poles / Overhead (OH) Utilities

Included	Excluded	
☒	☐	Provide a Light Pole symbol at the surveyed location of each privately owned Light Pole within the LOS ▪ **If there is no OH connectivity** from a privately owned Light Pole to a Utility Pole within the LOS, then • Label as "PVT" in the UTLE • Do not include in Pole Data Table or in the total pole count **OR** ▪ **If there is OH connectivity** from a privately owned Light Pole to a Utility Pole within the LOS, then • Show all OH connectivity • Provide a Pole ID# in the plan view • Reference in the Pole Data Table and include all data required and include in total pole count
☒	☐	Show aerial connectivity from inside the LOS to the next pole/structure outside of the LOS ▪ For the next pole outside of the LOS: • Show a directional segment of all OH facilities attached to the pole • Ensure all OH facilities attached are shown in the Pole Data Table
☒	☐	For any OH lines crossing the LOS: Show aerial connectivity to the next nearest pole(s)/tower(s)/structure(s) outside of the LOS (outside the LOS to outside the LOS)
☒	☐	Provide height of clearance for existing OH utilities over the roadway as required at specific areas indicated in the project's SUE scope, or as instructed by the SSUE
☐	☒	Provide Point of Attachments (POA) for existing OH utilities on utility poles as required at specific areas indicated in the project's SUE scope, or as instructed by the SSUE ▪ Use the standard POA Legend and add any additional acronyms as necessary ▪ Show each of the utility attachments in the POA table. ▪ Provide utility attachments that are 14' or above ▪ Not required to reference the utility owner in the POA table. ▪ Not required to show crosswalk signals or crosswalk signs. ▪ When a transformer or utility interface is encountered, provide a POA entry for the bottom and the top of the bracket bolts

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SUE Submittal Signatures:

Please indicate other project specific items as documented in the SUE contract, task order (if applicable), and/or SUE Kick-Off meeting:

Click here to enter text.

Please indicate basis for all excluded items below:

Point of Attachments (POA) not in this project's SUEScope.

All required elements with the exclusions stated above have been included in the Final SUE deliverables.

GEORGIA REGISTERED 2/29/16 No. 29697 PROFESSIONAL ENGINEER HANNAH J. BELL

Hannah J Bell — 2/29/16

SUE Professional (seal/signature as applicable) — Date

Please submit to:

Raymond B. Chandler
State Subsurface Utilities Engineer (SSUE)
GDOT Office of Utilities
One Georgia Center
600 W. Peachtree Street, 10th Floor
Atlanta, GA 30308
Fax.: 404-631-1934
Email: rchandler@dot.ga.gov

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APPENDIX

EXAMPLE UTILITY OWNER LIST ENTRIES

*Georgia Power Company (GPC) – Distribution
Insert contact name
Insert contact address
Insert city, state, & zip
Tel. No.: *Insert contact telephone number*
Note: All Distribution Power found within the LOS is Georgia Power unless otherwise noted on the plans.

IGC Telecom (IGC) – Fiber Optic
Insert contact name
Insert contact address
Insert city, state, & zip
Tel. No.: *Insert contact telephone number*
Note: Utility Owner was contacted and verified that there are no facilities within the LOS of the project.

Newton County Water Authority (NCWA) – Water & Sewer
Insert contact name
Insert contact address
Insert city, state, & zip
Tel. No.: *Insert contact telephone number*
Note: Newton County has Water and Sewer within the LOS from the beginning of project to the Rockdale/Newton County Line.

**Please ensure that a separate entry is provided for Georgia Power Transmission and Georgia Power Distribution.*

EXAMPLE SANITARY SEWER DATA TABLE

Manhole #	Top Elevation	Invert (In) (Size Direction)	Invert (Out)	Misc.
601	800.00	790.20 (8" E) 790.37 (6" NW)	790.00	Connects to SSMH 600
602	805.00	791.20 (8" W) 792.00 (6" N) 792.00 (6"SE)	791.00	
603	810.00	795.20	795.00	Inaccessible. Per Records Only

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EXAMPLE UTILITY POLE DATA TABLE

POLE #	POLE ID	POLE OWNER	UTILITY OWNERS ATTACHED					NORTHING	EASTING	HT.	DIA.	MAT'L	MISC.
			ELEC	TELE COM	CABLE TV	TRAFFIC	OTHER						
1	12345	GPC	GPC, EMC	ATT	COM, CHR			2456912.3	259456.2	35'	12"	Wood	
2	NA	ATT						2456652.2	259410.9	50'	16"	Steel	Aband.
3	BIBB2	BC	EMC	ATT		BC	Guy	2455901.8	259200.3	45'	24"	Concrete	Signal Pole
4	BC1023	GDOT				GDOT	Guy	2245879.2	259456.7	65'	15"	Steel	Camera
5	NA	PVT	GPC					2456915.3	259460.2	35'	12"	Wood	Pvt. Light
6	NA	GFR						2455875.8	259210.3	16'	4"	Metal	RR Signal
7	6785	GPC	GPC					2456812.3	259756.2	35'	12"	Wood	Trans.

TOTAL GEORGIA POWER POLES (GPC)	**2**
TOTAL AT&T POLES (ATT)	**1**
TOTAL BIBB CO. TRAFFIC CONTROL POLES (BC)	**1**
TOTAL GDOT POLES (GDOT)	**1**
TOTAL GEORGIA-FLORIDA RAILWAY COMPANY (GFR)	**1**
TOTAL PRIVATE POLES (PVT)	**1**
TOTAL POLE COUNT	**7**